HDPE MUNICIPAL WATER SERVICE

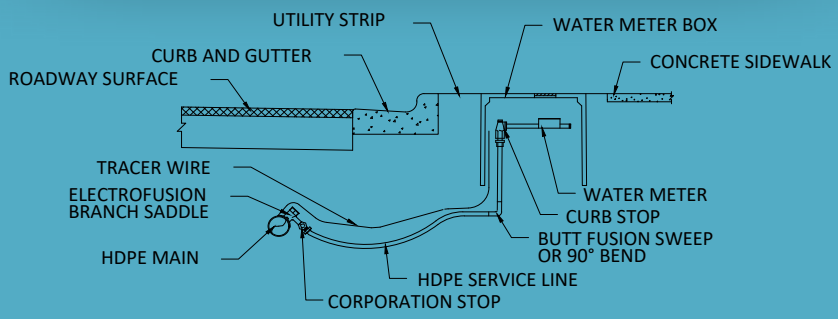
PIPELINE PLASTICS



APPLICATIONS

Pipeline Plastics Municipal Water Service (MWS) Pipe is manufactured to meet the rigorous service conditions of municipal water service operating environment. Our MWS pipe meets all requirements of AWWA C901 *"Polyethylene "PE" Pressure Pipe and Tubing, 3/4in. through 3in. for Water Service"* and utilizes a high performance, bimodal, high density polyethylene (HDPE) PE4710-CC3 compound designed specifically for potable and municipal water service systems.

HDPE pipe uses heat fusion for leak free joining, or many types of mechanical tapping tees and couplings. PE pipe is cost effective to install both in open cut and trenchless applications. NSF Standard 14 Certified to AWWA C901 for potable water service, our PE4710 MWS Pipe is extremely low maintenance by withstanding the effects of disinfectants, pressure cycling and seismic events better than traditional materials to achieve a >100 year design life.



FEATURES AND BENEFITS OF HDPE WATER PIPE

- PE4710-CC3 compound for 100 year design life from the effects of disinfectants
- Heat fused leak-free joints for the entire life cycle
- Small bend radius of 20x OD* makes installation faster with fewer fittings and joints
- Impact & Rapid Crack Propagation Resistant even at cold temperatures
- Capable of over 10 million pressure cycles from repetitive surge events
- Immune to corrosion & scale build up that can reduce flow capacities
- High fluid flow coefficient C=150 over the life of the piping system
- Available with blue, purple or green stripe

***See AWWA M55 for design and installation guidance.**

JOINING

With Pipeline Plastics' PE4710 MWS Pipe heat fused joints, the pipe joints are fully restrained and are designed to be at least as strong as the pipe itself, with no leaks for the entire 100 year design life. Other pipe materials typically see the joint as the "weak- link" in the system that is often the source of leaks and infiltration. HDPE pipe can be joined by heat fusion using the industry accepted ASTM F2620 procedure for butt-fusion and saddle fusion. Electro-fusion as well as many types of mechanical couplings and tapping tees designed for use on HDPE pipe can also be used. Always follow the fitting manufacturer installation procedure.

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DESIGN, INSTALLATION AND LEAK TESTING

Pipeline Plastics recommends following the practices and guidance of AWWA M55 and the Plastics Pipe Institute (PPI) Handbook of Polyethylene Pipe, second edition available on the PPI website, www.plasticpipe.org.

Leak testing can be performed up to 1.5x the maximum pressure rating of the piping system. Leak testing should be performed according to ASTM F2164, "Standard Practice for Field Leak Testing of Polyethylene (PE) and Crosslinked Polyethylene (PEX) Pressure Piping Systems Using Hydrostatic Pressure." Appropriate safety considerations should always be followed.

Follow AWWA C651 for disinfection practices before putting a line into potable water service.

CONFORMANCE

- ANSI/AWWA C901 "Polyethylene (PE) Pressure Pipe and Tubing ¾" through 3" for Water Service"
- ASTM D3035 "Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter"
- Cell Classification PE445574C per ASTM D3350
- CC3 Chlorine Category Rating for the highest resistance to disinfectants in the most demanding water conditions
- NSF/ANSI Standard 14 Certified to AWWA C901 for Potable Water Contact
- Plastics Pipe Institute (PPI) TR-4 Listing as PE4710-CC3
- Hydrostatic Design Basis 1,600 psi @ 73°F (23°C) and 1,000 psi @ 140°F (60°C) per ASTM D2837
- Color & UV Stabilizer: © Black with 2% min Carbon Black per ASTM D3350
- Heat Fusion Joining as per ASTM F2620 and PPI TR-33/TR-41
- Installation as per AWWA M55 and PPI PE Handbook, 2nd edition

MUNICIPAL WATER DISTRIBUTION PIPE SIZES

IPS		DR 9		Coils (ft)
Size	OD (in)	*Working Pressure (WP) Pressure Class (PC)*	**250 psi**	
		WP + Recurring Surge	**375 psi**	
		WP + Occasional Surge	**500 psi**	
¾"	1.050	*Min Wall (in)* *ID[A] (in)* *Wt[B] (lb/ft)*	0.095 0.848 0.125	500, 1000, 1500, 2000
1"	1.315	*Min Wall (in)* *ID[A] (in)* *Wt[B] (lb/ft)*	1.146 1.005 0.235	500, 1000, 1500, 2000
1 ¼"	1.660	*Min Wall (in)* *ID[A] (in)* *Wt[B] (lb/ft)*	0.184 1.269 0.375	500, 1000, 1500, 2000
1 ½"	1.900	*Min Wall (in)* *ID[A] (in)* *Wt[B] (lb/ft)*	0.211 1.452 0.491	500, 1000, 1500, 2000
2"	2.375	*Min Wall (in)* *ID[A] (in)* *Wt[B] (lb/ft)*	0.264 1.816 0.767	500, 1000, 1500, 2000
3"	3.500	*Min Wall (in)* *ID[A] (in)* *Wt[B] (lb/ft)*	0.389 2.676 1.663	500, 1000, 1500

Physical Properties	Nominal Value*	Test Method
Density	0.960 g/cm³	ASTM 1505
Melt Index (MI) 190°C/2.16kg	0.07 g/10 min	ASTM D1238
High Load Melt Index (190°C/2.16kg)	7-16 g/10 min	ASTM D1238
PENT	>500 hours	ASTM F1473
Tensile Stress @ Yield	3,500 psi	ASTM D638
Tensile Stress @ Break	5,000 psi	ASTM D638
Elongation @ Break	>400%	ASTM D638
Flexural Modulus	150,000 psi	ASTM D790
Brittleness Temperature	<-103°F	ASTM D746
Hardness	62 Shore D	ASTM D2240
Vicat Softening Temperature	256°F	ASTM D1525
Thermal Expansion	1.0 x 10^{4} in/in/°F	ASTM D696

*Nominal values are typical results and are not guaranteed or intended to be used as a product specification.

Note - These tables represent standard sizes. IPS and other sizes in C901 are available. A - ID (in): Inside Diameter may vary due to manufacturing tolerances. B - Wt (lb/ft): Weight per foot in pounds may vary due to manufacturing tolerances.